NCR S46 Server

Installing Network Operating System

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Preface

The preface provides valuable information about the design and use of this book.

About This Book

This book provides procedures for installing network operating systems on the NCR S46 server.

Who Should Read This Book

This book should be used by any person who installs and configures network operating systems on the NCR S46 server.

How This Book is Organized

This book is divided into the following chapters:

- Chapter 1 - Installing Windows NT Server 3.51
- Chapter 2 - Installing Windows NT Server 4.0
- Chapter 3 - Installing UNIXWare
- Chapter 4 - Installing SCO UNIX

Conventions Used in This Book

The following conventions are used in this book:

F1	A letter, number, symbol, or word in this font represents a key on your keyboard. For example, the instruction “press **F1**” means press the key labeled “F1” on your keyboard.
Enter	This represents the key labeled “Enter” on your keyboard.
X + Y	Two or three key names, separated by plus signs, indicate multiple-key entries. For example, **Control + Alt + Del** means hold down **Control** and **Alt** and press **Del**.
Note	Notes indicate pivotal information and may be used to emphasize a recommended sequence of steps.
Warning	Warnings indicate hazards that can cause personal injury or equipment damage if the hazards are not avoided.
Caution	Cautions indicate hazards that might cause personal injury, damage to hardware, or software if the hazards are not avoided.

Related Publications

For supplementary information, refer to the following books:

- *NCR S46 Server User Guide* (BST0-2142-38)
- *NCR S46 Service Guide* (BST0-2142-39)
- *NCR S46 Server Support Log* (BST0-2142-40)
- *NCR S46 AMIDiag Supplement* (BST0-2142-42)

Other publications may later become available. Check with your NCR sales representative for the latest information.

Chapter 1

Installing Windows NT Server 3.51

Completing a Factory Installation

If your system was pre-loaded at the factory with Microsoft Windows NT Server, you need to complete the installation by providing some site-specific configuration information.

To complete the factory installation, follow these general steps:

- Confirm the hardware setup
- Identify the server
- Configure the network
- Install Server Manager
- Configure the video driver

Confirming the Hardware Setup

To confirm the hardware setup prior to powering the system, follow these steps:

1. Verify that both the mouse and the keyboard are plugged **into the appropriate receptacles in the back of the system**.
2. Verify your system is connected to the network onto which it will be installed. Before continuing, verify you have the following information:
   - The name of your domain or workgroup.
   - The unique name of this system.
   - Whether this system is to be a Primary Domain Controller (PDC), a Backup Domain Controller (BDC), or a non-Domain Controller server.
3. Remove the yellow “CAUTION” label from the front of the machine, and open the disk access door.
4. Turn the system on by pressing the button immediately to the right of the disk drive inside the disk access door. The system begins POST tests and prepares for completion of the Windows NT installation.

Identifying the Server

To identify the Server, follow these steps:

1. When prompted for your name and company name, complete the information and choose “Continue.” You can change these entries if you enter incorrect information. When the entries are correct, choose “Continue.”
2. Enter the product ID when prompted. The Windows NT Server Security Role dialog box appears.
3. Select the security role of the server. If this system is a Primary Domain Controller or a Backup Domain Controller select Domain Controller then “Continue.” If not, select Server and choose “Continue.” The Choose Licensing Mode dialog box appears.
4. Indicate whether your server software license has been purchased on a “Per Server” or a “Per Seat” basis by selecting the appropriate button. Enter the total number of licenses purchased if necessary, and choose “Continue.”
5. Verify that you have read, understand, and agree to abide by the licensing agreement. After reading the agreement, select the box next to the sentence which begins “I agree that” and choose “OK.”
6. Specify your server’s unique name by entering the name and choosing “Continue.”

CAUTION: Be sure that the system name that you select does not contain spaces, commas, or any of the following characters: ! @ # $ % ^ & * < > / \ ? | { } [ ]

7. You are given the opportunity to change the name you have selected. When your entry is correct, choose “Continue.”
8. You are asked to select the language for your server. Selecting the language for your server also determines the initial settings for currency, date, time, etc. Select the language to be used, and choose “Continue.”

9. Now you can set up a printer on this server. If you want to set up a printer, select the name of the printer, the printer driver to use, and the port to be printed to. Choose “Continue.” If you do not want to set up a printer at this time, select “Cancel”, and then choose “OK.”

Configuring the Network

The installation procedure now prepares to configure the network on your system by searching for the network card. To configure the network, follow these steps:

1. If a network card is found a setup window appears prompting you to select adapter options for the specific network card. Choose “Continue” when the setup options are correct. Proceed to step 3.

CAUTION: Be sure that the driver installed with the network adapter card is the driver provided with the adapter. Do NOT use the default drivers provided on the NT 3.51 installation media.

   If no network card is found, you are prompted whether the installation procedure should automatically detect the Network Interface Card (NIC), or whether you want to manually select an adapter. Press “Continue” to manually select the adapter. By manually selecting the adapter card you are given the opportunity to install Microsoft Remote Access Service (MSRAS). Select REMOTE to install MSRAS.

2. Select a port and modem type. Once the port and modem are selected, the installation procedure automatically detects the modem.
3. The installation procedure copies the files for the remainder of the Windows NT Server installation from the temporary installation directory into the Windows NT home directory.
4. Select the server domain.
   – If this system is to be the Primary Domain Controller of a new domain, select the Domain button, complete the name of the domain, and choose “OK” to continue.

– If this system is to be a Backup Domain Controller or a Non-Domain Controller Server on a domain, select the Domain button, complete the name of the domain, and the User name and password of an administrator on the domain. When you have completed your selections, choose “OK” to continue.

5. Icons and program groups are created for your Windows NT installation.
6. Set the time, date, and time zone on your system. When correct, choose “OK.” Your system reboots after saving the installation configuration.
7. Log on using the Username *Administrator* with no password. We recommend changing the password for security purposes after you have logged on.

Installing Server Manager

A welcome message displays indicating that Server Manager is to be installed. To install Server Manager, follow these steps:

1. Choose “Next” to continue installation or “Cancel” to abort installation.
   – If “Next” is chosen and a previous release of the Server Manager **has** been installed on this system, a message displays asking whether you want to upgrade the installation of Server Manager.

     Select “Yes” to have Setup install Server Manager in the directory where the previous version exists. Select “No” to specify the directory where Server manager is to be installed.

   – If “Next” is selected, and a previous release of the Server Manager **has not** been installed on this system, the Choose Destination Location dialog displays permitting you to choose the directory where Server manager is to be installed.
   – If “Cancel” is selected, the installation is aborted. However, the next time the system is rebooted, the installation will attempt to run again. If NCR Server Manager should not be installed on the system, execute the following steps to disable future installation attempts:

a. Remove the installation program from the startup group by displaying the Program Manager, selecting the only program available in the Startup group, clicking on the background of the Startup group and pressing Delete.

b. Remove the installation startup files by starting the File manager, move to the C: drive, select C:\ATTSM, and then delete all files in this directory.

If installation of NCR Server Manager is desired in the future, installation can be accomplished from the *NCR ValuePlus CD for BackOffice* provided with the server.

2. If you do not want to install in the default directory (c:\svrmgr), choose BROWSE**...** and select a directory in which to install the Server Manager software or type the directory in the Path field and press "OK." When the proper directory displays within the Destination Directory window, choose "Next." If you want to exit install at this point, choose "Cancel."

Note: Do not install Server Manager in the Windows NT system directory (for example, c:\WINNT\SYSTEM). The system directories are reserved for operating system files only and are not for application files.

The Select Components dialog box appears displaying the system configuration options.

3. Choose one of the buttons representing a specific system or choose the "Windows NT System not listed" option if your system is not listed. Select "Next" to continue the installation.

4. Indicate whether you have a Server Monitor Module board installed in the system when prompted. Setup begins copying files to the specified directory. A Setup window displays the completion percentage of the file copy process.

When the files have been copied, a message displays requesting logon account information.

5. Enter the name of a pre-existing user account that has full administrative privileges (for example, an account that is in either the "Domain Administrators" or "Administrators" group). This account must also have the advanced user right "Log on as a service." To add this right to the user account, use the *User Manager* application that comes with Windows NT.

   This dialog box is used to configure the account that the System Monitor and Alert Listener services will be started as. If these services do not start correctly after installation, verify that the account name and password are correct by going into *Control Panel* and then into *Services*. The Hardware Monitor service, by default starts under the System Account.

6. When the setup process is complete for the configuration option you selected, the Select Program Folder message displays. You can specify the Program Folder where Setup should add Server Manager program icons.

7. Type in a new folder name in the Program Folder field or select one from the Existing Folders list. When the proper name displays in the Program Folder field, choose “Next.” If you want to discontinue the installation at this point, choose “Cancel.”

   When Server Manager installation is complete, the Program Folder is created and a message displays prompting you to reboot your server.

8. Select “Yes” to have Setup reboot your server automatically. Select “No” to exit Setup without rebooting your system.

Configuring the Video Driver

To configure the video driver, follow these steps:

1. The video adapter detected by the installation process displays. Select “OK” to confirm the selection.

2. Select the video driver configuration, including the resolution, number of colors, and scan rate.

3. After you have chosen the desired parameters, select TEST to make sure the video displays the resolution correctly. A pop-up screen informs you that the test is about to begin. Select “OK” to confirm.

Your screen's resolution is set to match the parameters you have selected. After approximately five seconds, the screen returns to the previous resolution and you are asked whether the test displayed properly. If so, select "Yes" to continue the installation. If not, select "No", return to the test screen and specify different parameters for the video test. When the test displays appropriately, choose "OK" to save the settings. Your system configuration is saved and the system reboots.

The pre-loaded installation of Windows NT Server is complete.

Performing a Full Installation

If Windows NT Server was not pre-loaded on your server at the factory, use this section to prepare your system and install the software. Before beginning the procedures in this section you will need a copy of each book listed below.

- *NCR S46 User Guide* (BST0-2142-38)
- *NCR S46 Service Guide* (BST0-2142-39)

The following table list procedures that must be performed to complete a full installation:

Table 1-1. Procedures to Complete a Full Installation

Step	Procedure	Reference
1	Confirm the hardware setup	"Confirming the Hardware Setup" subsection in this section
2	Confirm the CMOS configuration	"Confirming the CMOS Configuration" subsection in this section
3	Obtain the necessary media	"Obtaining the Necessary Media" subsection in this section
4	Configure the disk arrays using the Mylex DAC960PL Adapter	"Configuring the Disk Arrays Using the Mylex DAC960PL Adapter"subsection in this section
5	Install the Diagnostic Partition	*NCR S46 Server User Guide*; Chapter 3, "Hardware Related Utilities and Applications"
6	Configure the server using the System Configuration Utility (SCU)	"Configuring the Server Using the System Configuration Utility (SCU)" subsection in this section.
7	Configure the adapter settings using the Adaptec BIOS SCSISelect Utility	"Configuring the Adapter Settings Using the Adaptec BIOS SCSISelect Utility" subsection in this section.
8	Configure the NCR PCI SCSI Adapter	If your server has a NCR PCI SCSI adapter pre-installed or you are planning to install an NCR PCI SCSI adapter yourself, refer to the *NCR PCI SCSI Host Adapter User's Guide* for installation and configuration information.

Step	Procedure	Reference
9	Install Operating System	**Caution:** You must install the Diagnostic Partition before installing NT. You cannot install the Diagnostic Partition after installing NT without having to delete your NT partition first. "Installing the Operating System" subsection in this section.

For additional information about installing Windows NT, refer to the Microsoft *Installation Guide* for Windows NT Server.

Confirming the Hardware Setup

Before beginning to install, confirm these hardware requirements:

- Ensure all Hot pluggable SCSI devices are not manually set to an ID. Ensure drives are firmly seated in the hot-docking backplane.

Note: SCSI ID's within the Hot Dock are dynamically configured by drive location. Drive termination is provided by the hot-docking backplane.

- Ensure all bus cards are seated properly in the system. For maximum performance, use EISA or PCI cards, not ISA cards.
- Ensure that the boot disk is in the correct slot (top left)

Confirming the CMOS Configuration

Use the BIOS setup Utility to confirm the CMOS configuration as follows:

1. Reboot your system and press **F1** when prompted to access the BIOS Setup.
2. Under Main, verify the following:
   - Correct System date and System time
   - "Floppy Options" parameter is set to "1.44/1.25 MB 3-1/2."

– "Primary IDE Master, Primary IDE Slave, Secondary IDE Master, and Secondary IDE Slave" parameters are all set to "Not Installed."

Note: IDE hard disks are not supported for use under Windows NT on the NCR S46 server.

3. Under Advanced, verify the following:
   – Under Peripheral Configuration, set the following values:

Configuration	Manual
Standard IDE	Disabled
Floppy	Enabled

   – Under Advanced Chipset Configuration, verify the following values:

MPS Version:	1.4
Second I/O APIC:	Disabled
PERR Mode	Disabled

4. Under Security, verify the following:
   – Set "User Password," if required.
   – Set "Administrator Password," if required.
5. Under Exit, press **Enter** to Exit Saving Changes.

Obtaining the Necessary Media

Before you begin to install Windows NT Server 3.51, make sure that you have the following media:

- *NCR S46 Server* Platform CD
- Windows NT V3.51 Server installation boot diskettes (3)
- Adaptec 7800 Family Manager diskette
- Windows NT V3.51 Server CD
- Mylex DAC960 Software Kit Version 1.02 (if installing a Mylex adapter)
- Blank 3.5" high density diskette for creating an emergency repair diskette
- Documentation kits for all network adapters (NT drivers are included in the kit)

Note: NT Drivers for each adapter are delivered with the Documentation Kit for that adapter. The kit includes the correct version of the drivers. Do NOT use the drivers provided by default on the NT 3.51 installation media.

Configuring the Disk Arrays Using the Mylex DAC960PL Adapter

This section describes procedures to configure the disk arrays using the Mylex DAC960PL adapter.

Installing a Mylex DAC960PL Adapter

To prepare the system for the Mylex DAC960PL Disk Array adapter installation, if **not pre-installed** at the factory, follow these steps:

CAUTION: Use a grounding strap to prevent harmful static discharge when handling, installing and cabling host adapters.

1. Turn off the power to the console and the system. Disconnect the system power cord from either the rear panel of the system or from the wall outlet.
2. Refer to the *NCR S46 Server Service Guide*, Chapter 5, "Installing and Removing Add-In Boards," for information about inserting and removing add-in boards.
3. Install the Mylex DAC960PL adapter in Slot 1 of PCI Bus 1 (third PCI slot from bottom, marked as P4) as instructed in the *Mylex DAC960PL Disk Array Controller User's Manual* and the *NCR S46 Server User Guide*. If there are multiple Mylex DAC960PL RAID controllers in the system, make sure that the bootable drive is connected to the top Mylex controller.

CAUTION: Do not install the Mylex adapter into an EISA slot. Attempted installation into an EISA slot will damage the adapter board.

4. Refer to chapter 2 "Installing and Removing Drives and SCSI Hot Plug Bay" in the *NCR S46 Server Service Guide* for cabling your Mylex Disk Array Adapter in a NCR S46 server.

5. Connect the desired disk drives to the Mylex DAC960PL Adapter. Internal drives are automatically terminated correctly by the Hot-docking backplane in the NCR S46 Server. See the *NCR S46 Server User Guide* for more details on the SCSI layout.
6. Make sure, that the CD ROM and tape drives are connected to the narrow SCSI cable and to the on-board SCSI Channel A (marked as “SCSI A”).

Configuring RAID Disks

To configure the RAID disks, follow these steps:

1. If there are disk drives connected to both the on-board Adaptec controllers and the Mylex controllers, decide which disk you want to install the operating system on. The operating system should be installed only on disk drives connected to Adaptec controller A (SCSI A) or to the Mylex controller on PCI BUS 1, Slot 1 (P4)) or to the top Mylex controller if multiple Mylex controller are in the system.
2. If you want to install the operating system to an array connected to the Mylex DAC960PL adapter, verify the Mylex BIOS is “enabled.”

   If you want the operating system installed on the Adaptec, verify the BIOS is “enabled” for the Adaptec controller.
3. Boot to the Diagnostic Partition and run Utilities and Diagnostics.
4. Select “System Config Utils”, “Adapter Config Utils”, then “RAID Mylex” and press **Enter**. Follow the directions in the *NCR S46 Server User Guide* to configure disk arrays. Also reference the *DAC960PL Disk Array Controller User’s Guide*, if necessary.
5. For best performance, configure the operating system disk(s) as RAID 1 or RAID 6. Other disks should be configured to match the application, normally as RAID 5. If desired, leave one disk as a hot standby.

Special Considerations

- If more than one Mylex Disk Array adapter is used, install additional adapters in PCI slots lower in the scan order. Additional Mylex adapters can be used for external disk expansion cabinets.

- An external disk (JBOD Single-ended configuration) expansion cabinet attached to a second Mylex adapter must have proper SCSI termination at the end of each SCSI bus.

Configuring the Server Using the System Configuration Utility (SCU)

To configure the server using the SCU, follow these steps. Refer to Chapter 4, "Configuring Your Server" in the *NCR S46 Server User Guide* for additional information on the System Configuration Utility.

1. At system startup, press **D** when prompted, to boot to the Diagnostic Partition.
2. At the MS-DOS startup menu press **Enter** to select "Run Utilities and Diagnostics."
3. From the Diagnostic Partition Main Menu select "System Config Utils", and then select "Execute SCU." When the blue System Configuration Utility banner page displays, press **Enter** to continue.
4. From the main SCU menu, highlight "Step 3: Change Configuration Settings," and press **Enter**.
5. Specify an administrative boot/configuration password. If the password has not been specified, you may press **Esc** when prompted to bypass this password, *or* you may specify a new password. This password may be disabled from the System Board setup screen**.**

Note: Except for EISA and ISA cards, no board names are used, but are referenced by class name (for example "PCI SCSI Device"), PCI "Bus number," and "Dev letter."

The device scan order, as specified in the *NCR S46 Server User Guide*, can help you determine which specific vendor card occupies which PCI slot.

"PCI Undefined Device" denotes the INCA (Interrupt and Control ASIC) chip which arbitrates bus and control handshaking, and can be enabled to check such things as: internal voltages, temperature, fan failures, and chassis intrusion.

6. Highlight “System Board” and press **Enter**.

   – Under “MP Spec Version” (Systems Group), verify that “MP Spec V1.4” is selected.

   – Under “Secondary I/O APIC Control Option” (System Performance), verify “Disable Secondary IOAPIC” is listed.

   – Under “PCI System Error Detection” (Management Subsystem Group), verify “PCI System Error Detect” is Disabled.

   – Under “Shadowing ISA ROMs Options” (Memory Subsystem Group), verify that all memory regions are “Enabled” except for regions allocated as “shared memory” (memory shared between the adapter and the system, such as on the EiconWAN adapter or the Server Monitor Module) or regions assigned as memory-mapped I/O. An adapter’s memory assignments can be viewed from the Global Resources Map in the SCU.

Note: ROM Shadowing is automatically disabled for an adapter whose .CFG file contains the string “CACHE=NO” in its memory references.

   – Under “Extended Memory Options” (Memory Subsystem Group), verify that “Cache Mode” is set to “Enable” and that “1MB ISA Hole Control” is set to “Disable.”

   – Set the On-Board Communications Devices as follows, if necessary:

   – Serial Port 1 Configuration: COM1:3F8h -IRQ4

   – Serial Port 2 Configuration: COM2:2F8h -IRQ3

   – Parallel Port Configuration: LPT1:378h - IRQ7

   When all of the options on this System Board screen have been set, press **Esc** to return to the previous screen.

7. Highlight each of the listed devices, and press **Enter**.

   – Ensure that the IRQ, port address and I/O address for the device are not in conflict with any other device on the system. Conflicts are typically detected by the SCU automatically.

   – Ensure that any device-specific configuration options are set correctly. For example, for network cards with multiple connectors, specify the connector type as appropriate for your system.

Highlighting a PCI entry and pressing **Enter** displays the "Enabled: Current Configuration" option by default. To change the device's IRQ assignment, press **Enter** to change to "Enabled: Manual Configuration." Press **F6** which enables you to change "Resources."

CAUTION: Pressing **F6** when "Enabled: Manual Configuration" is selected causes the current PCI device resource assignments to change.

8. When all devices have been examined and configured to your satisfaction, press **Esc** to return to the SCU main menu. Choose "Step 4: Save Configuration" before exiting to save changes you have made.
9. If you want to obtain a printed copy of your configuration, select "Step 5: View Switch /Jumper Settings," then press **Enter** to continue. Press **F7** to specify the output destination.
10. After the changes have been saved, select "Step 6: Exit" and press **Enter** as necessary to return to the Diagnostic Partition menu.

Note: If you choose "Step 6: Exit" without saving your changes, the system prompts you to save before exiting. You must then back out and choose "Step 4: Save Configuration."

11. Create backup diskettes of the System Configuration Utility and BIOS flash utility.
    - To create a copy of the SCU utility, select "System Config Utils" from the main menu, select "Create SCU Backup," and press **Enter**.
    - To create a copy of the BIOS flash utility, select "BIOS Flash Utility" from the main menu, select "Create Flash Backup," and press **Enter**.

Note: These diskettes are to be used solely for backup purposes. You are not authorized to copy program files, nor to use these diskettes on any other system.

12. Remove the diskette from the floppy disk drive and press **Esc** to return to the Diagnostic Partition menu.

Configuring the Adapter Settings Using the Adaptec BIOS SCSISelect Utility

The Adaptec BIOS SCSISelect Utility allows you to configure the SCSI AIC-7880 host adapter to settings other than defaults. Select one of the options below to start the SCSISelect utility.

- If you have a Diagnostic Partition installed, select the "System Config Utils", "Adapter Config Utils" and then "SCSI-Adaptec."
- Boot the server and press **Control + A** when prompted for the SCSISelect utility.

Chapter 6, "Configuring Adapters" of the *NCR S46 Server User Guide* provides additional information on configuring adapter settings.

Note: If the system boot device is connected to one of the Adaptec SCSI channels, then the host adapter BIOS should be enabled for that SCSI channel. When this option is disabled, the system BIOS does not scan the Adaptec channel for a bootable drive.

To use the Adaptec BIOS SCSISelect Utility, follow these steps:

1. Under Bus:Device, highlight the entry representing the SCSI-A adapter and press **Enter**. Note that SCSI-A is denoted as "0X:0Bh -> ChA" and SCSI-B is denoted as "0X:0Ch -> ChB" where 0X is the PCI bus number.
2. Highlight "Configure/View Host Adapter Settings," and press **Enter**.
   - Under "SCSI Bus Interface Definitions," verify that the "Host Adapter SCSI ID" is "7" and that SCSI Parity Checking is "Enabled."
   - Under "Additional Options," choose "SCSI Device Configuration" and press **Enter**. Set the fields as specified below:
   - "Initiate Sync Negotiation" should normally be set to "yes" for operating devices.
   - "Maximum Sync Transfer Rate" may be set to "40.0" for all SCSI devices. This value is the default and defines the "maximum" transfer rate. SCSI devices typically negotiate their transfer speeds.
   - "Enable Disconnection" should normally be set to "yes."

- "Initiate Wide Negotiation" can be left "yes", even if "wide" SCSI is not used.
- If BIOS is enabled, you must choose to "Send Start Unit Command" to power up drives on BIOS load of the Adaptec controller. You should set this option to "no" for the SCSI-ID 7, which is your controller.

3. Press **Esc** to return the SCSISelect Configuration Menu and select "Advanced Configuration Options" from the "Additional Options" list. The following fields can normally be left as the default.
   - "Host Adapter BIOS" should be set to "Enabled" if bootable drives are attached.
   - "Support Removable Disk Under BIOS as Fixed Disks" should be "Boot Only."
   - "Extended BIOS Translation for DOS Drives > 1 GB" should be "Enabled."
   - If desired, enable "Display <CTRL-A> Message During BIOS Initialization."
   - "Multiple LUN Support" should be "Disabled."
   - "BIOS Support for Bootable CD-ROM" should be "Enabled."
   - "BIOS Support for Int13 Extensions" should be "Enabled."
   - "Support for Ultra SCSI Speed" should be "Enabled."
4. Press **Esc** twice to return to the Options menu. If configuration changes have been made, you are prompted to "Save Changes Made?." Select "Yes" to save the changes, and press **Enter**.
5. From the Options Menu, select "SCSI Disk Utilities" and press **Enter**.
   - A SCSI channel poll is performed and a current list of all devices the controller detects is displayed.
   - You may highlight a valid choice and press **Enter** to view or perform additional utilities.
   - Formatting a hard disk performs a low-level reinitialization, and erases all data.
   - You may perform a DISK VERIFY operation.

6. Return to the top level menu, highlight the entry representing the SCSI-B adapter and press **Enter**. Repeat steps 2 through 6. Note that SCSI-A is denoted as “0X:0Bh -> ChA” and SCSI-B is denoted as “0X:0Ch -> ChB” where 0X is the PCI bus number.
7. When complete, press **Esc** until prompted to exit the Utility.
8. You must reboot at this time. Choose “Reboot System” then “Reboot” from the Diagnostic Partition menu.

Disabling Adapter BIOS

To boot from an adapter that is lower in the scan order and also to free system resources, use the Adaptec BIOS SCSISelect Utility to disable the adapter BIOS as follows:

Note: The SCSI controller cannot be used as the boot controller if the BIOS is disabled.

1. Under “Bus:Device,” highlight the appropriate entry (either channel A or channel B, as listed) and press **Enter**.
2. Select “Configure/View Host Adapter Settings” and press **Enter**.
3. Under “Additional Options,” press **Enter** to choose “Advanced Configuration Options.”
4. Go to “Host Adapter BIOS” and press **Enter**. Select “Disabled” and press **Enter**.
5. When finished, press **Esc** three times to return to the Main Menu.
6. Press **Esc** to exit the utility. Select “Yes” when asked to exit the utility. The system then prompts you to press any key to reboot.

Configuring the NCR PCI SCSI Adapter

If your server has a NCR PCI SCSI adapter pre-installed or you are planning to install an NCR PCI SCSI adapter yourself, refer to the *NCR PCI SCSI Host Adapter User’s Guide BD10-4939-A* for installation and configuration information.

Installing the Operating System

To install Windows NT Server, follow these steps:

CAUTION: You must install the Diagnostic Partition before installing NT. You cannot install the Diagnostic Partition after installing NT without having to delete your NT partition first.

CAUTION: When installing NT, do not use the adapter drivers on the CD. Use the adapter drivers located on diskette(s) which are supplied with the specific adapter.

1. Insert the Windows NT Server Setup Boot diskette into the disk drive. Power on the server. The server cycles through its Power-On Self Tests (POST), and prompts you to boot to the Diagnostic Partition or to boot through the normal boot path. Press **Enter** to boot to the normal boot path to begin installing Windows NT Server.
2. When you are prompted to insert the Windows NT Server Setup diskette 2, insert the diskette, and press **Enter**.
3. Windows NT Server Setup gives you several options, including the option to setup Windows NT now. To select this option, press **Enter**.
4. You are prompted to select whether you want to perform an Express Setup or a Custom Setup. Press **C** to select Custom Setup.

Note: Custom setup should be selected because the default drivers on the NT 3.51 installation media are not the latest versions. Please use the drivers provided on diskette(s) which are supplied with the specific adapter and NOT the default drivers on the NT 3.51 installation media.

5. Press **S** to skip mass storage device detection then **S** again to specify the mass storage devices.
6. Select “other” from the list, then insert the diskette labeled “Adaptec 7800 Family Manager” and press **Enter**.
7. Select “Adaptec AHA-2940/AIC 78xx (PCI) NT v3.5x”, using the arrow keys, and press **Enter**.
8. If you have a Mylex DAC960PL Disk Array Adapter installed in your system, press **S** to install its drivers.

9. Select “other” from the list, then insert the “Mylex DAC960 Software Kit Version 1.02” diskette and press **Enter**.
10. Select “DAC960 NT SCSI Driver”, using the arrow keys, and press **Enter**.
11. Once all mass storage devices are installed, press **Enter**.
12. You are prompted to insert the Windows NT Server Setup diskette 3. Insert the diskette, and press **Enter** to continue the installation. A message may appear alerting you that one or more of your hard disks may actually be larger than the size for which it is currently configured. Press **Enter** to continue.
13. NT setup asks whether you want to install from the CD ROM or from the 3.5” diskette drive. If you have not already done so, insert the Windows NT Server installation CD ROM into the CD ROM drive. Press **Enter**. The system hardware and software components are displayed.
14. Make changes to the system hardware and software components if necessary, then press **Enter** to continue. A screen will appear displaying existing partitions and spaces available for creating new partitions.

CAUTION: The Diagnostic Partition created earlier is identified as “EISA Utilities.” Do NOT delete this partition, but rather create a new partition for NT in the available space.

CAUTION: Regardless of the drive onto which you choose to install Windows NT, certain files are placed on the left-most disk drive on the top plane (the disk drive with the lowest SCSI ID, referred to as C:) to allow the operating system to boot properly. Microsoft recommends that this disk drive be a permanent disk drive; not a hot-swappable one. It is recommended that you install Windows NT on the first disk drive (C:), or that you do not remove the first disk drive while the system is operating, especially during system startup.

15. If you want to partition an area of unpartitioned disk space, highlight the area, press “C,” and indicate the size of the partition to be created. If you want to use the entire unpartitioned space, press **Enter**.
16. Select the New (Unformatted) partition just created and press **Enter**.

17. Next, select the file system you want to use. You are given the option to format the disk as FAT or NTFS. Select the option you prefer, and press **Enter**.

    Setup formats the partition as you have chosen. Formatting the partition may take from a few minutes to a few hours, depending upon the size of the partition and the type of disk and controller in your system.

18. After the formatting is complete, you are prompted for the name of the directory where Windows NT Server will be installed. Enter the name of the directory or accept the default directory and press **Enter**.

19. Allow Setup to perform an exhaustive secondary examination of your hard disk(s) by pressing **Enter**.

20. You are prompted to insert diskettes for any drivers which you loaded from those diskettes. Follow the prompts as they appear.

21. Files are copied onto your hard disk from the installation CD ROM. Upon completion of file copying, you are informed that the current portion of setup has completed successfully, and that you should remove any diskettes and press **Enter**. (*Do not remove the installation CD.*)

WARNING: Contrary to the instructions on the screen, WAIT several minutes or until disk drive activity ceases before pressing Enter**. If you do not wait, the server's caching disk controller may not have enough time to complete all writing operations, and your system disk may not be installed correctly.**

Your system reboots, and you are automatically taken into Windows NT Server.

Completing the User/ Server Information

Continue the installation by completing user and server specific information:

1. When prompted for your name and company name, complete the information and choose "Continue." You can change these entries if you enter incorrect information. When the entries are correct, choose "Continue."

2. Enter the product ID when prompted. You can change this entry if you enter incorrect information. When the entry is correct, choose “Continue.” The Windows NT Server Security Role dialog box appears.
3. Select whether your server is to be a Domain Controller, or a Server. Select the appropriate button, and choose “Continue.”
4. Indicate whether your server software license has been purchased on a “Per Server” or a “Per Seat” basis. Select the appropriate box, enter the total number of licenses purchased if necessary, and choose “Continue.”
5. To verify that you have read, understand, and agree to abide by the licensing agreement, select the box next to the sentence which begins “I Agree” and then choose “OK.”
6. To specify your server’s unique name, enter the name, and choose “Continue.”

CAUTION: Be sure that the system name that you select does not contain spaces, commas, or any of the following characters: = + * ? > < | “ / , ; : { } [ ]

7. You are given the opportunity to change the name you have selected. When your entry is correct, choose “Continue.”
8. You are asked to select the language for your server. Selecting the language for your server also determines the initial settings for currency, date, time, etc. Select the language to be used, and choose “Continue.”
9. You are asked to specify the optional tasks for Setup to perform. Select “Continue” to allow Setup to perform all selected tasks.
10. You are asked to specify the optional components to be installed. Select “Continue” to install all selected optional components.
11. If you chose to install a printer, Setup prompts you to select the name of the printer, the printer driver to use, and the port to be printed to. Choose “Continue.” If you do not want to set up a printer at this time, select “Cancel”, and then choose “OK.”
12. The installation procedure tries to identify the type of network interface card installed on your server. Choose “Do not Detect” when the Network Adapter Card Detection dialog box appears.

Note: "Do not Detect" is chosen to prevent the installation of incompatible drivers from the NT 3.51 installation media. The NT drivers included with the documentation kit for the adapter should be used to ensure that the correct driver is installed.

13. Choose "Continue" to pick a network card manually. The Add Network Adapter dialog box appears.
14. Choose "other" from the Network Adapter Card pull down list and press "Continue."
15. Insert the driver diskette(s) requested, press **Enter**, and follow the screen prompts as necessary. Setup will copy files to the hard drive.

Selecting the Network Protocols

Continue the installation by selecting network protocols:

1. The Windows NT Server installation procedure prepares your available choices for network protocols.

   You may choose any of the protocol (NW LINK IPX/SPX), TCP/IP, or NetBEUI. When you have selected all of the protocols you want to install, choose "Continue."

2. The services you selected begin to install. If you selected IPX/SPX, you are prompted to select the frame type for the protocol. You may select "Automatic" or "Manual Frame" type detection. If you select "Manual" detection, you are prompted to select from among the frame types shown. When you have finished, choose "OK."
3. If you chose to install TCP/IP, select additional TCP/IP installation components, select "Continue", and follow the screen prompts as necessary.
4. When finished installing network components, select "OK." You can make network component changes later through the Control Panel if necessary.
5. Configure the parameters for the TCP/IP transport. Your network administrator should be able to give you the information you need to configure this service.

6. If you did not complete the WINS address field in the preceding screen, you may get a message indicating that “At least one of the adapter cards has an empty Primary WINS address.” If you see this message, choose “Yes” to continue.
7. Installation of the network components continues.
   – If you previously indicated that this system is to be a Domain Controller, you need to specify a Primary Domain Controller or a Backup Domain Controller. Select the appropriate choice, complete the name of the Domain in the blank provided, and choose “OK” to continue.

CAUTION: Do not include spaces or backward slashes in the domain name. When you have finished, choose “OK.”

   – If you previously indicated that you want this system to be a Server, you are prompted to specify the domain or workgroup this system will join and choose “OK.”

Providing Additional Setup Information

Continue the installation by providing the following information.

1. The installation process sets up program groups and icons for your system. You are prompted to enter the name and password for your Administrator. You need to enter the password twice. When you have finished, choose “Continue.” If the password is left blank, you are prompted to confirm that you do not want to specify a password for your Administrator. Leaving the password blank is not recommended, because without a password, anyone who has physical access to the system can gain full control of your system.
2. If you wish to setup a local account, enter a username and password. When you have finished, choose “Continue.” If you do not want to setup a local account, press Cancel. You can add a local account later using the User Manager.
3. You are now asked to specify virtual memory settings. Make changes to the virtual memory settings or accept the default settings and press “Continue.”

4. Select the path or driver you want Setup to search then press “Search Now” to enable Setup to search for existing applications.
5. Setup may prompt you for the names of some program files found on your system. If prompted, choose the appropriate applications, and select “Continue.” If you do not know what application is referenced, it is generally best to choose “None of the Above,” and choose “Continue.”
6. Select “Add All” and choose “Continue” to setup applications.
7. The installation program prompts you to enter the current date, time, and time zone. After all items have been entered, choose “OK.”
8. The video adapter detected by the installation process displays. Select “OK” to confirm the selection.
9. Select the video driver configuration, including the resolution, number of colors, and scan rate.

   After you have chosen the desired parameters, select TEST to make sure the video displays the resolution correctly. A pop-up screen informs you that the test is about to begin. Select “OK” to confirm.

   Your screen’s resolution is set to match the parameters you have selected. After approximately five seconds, the screen returns to the previous resolution and you are asked whether the test displayed properly. If so, select “Yes” to continue the installation. If not, select “No”, return to the test screen and specify different parameters for the video test. When the test displays appropriately, choose “OK” to save the settings.
10. You are asked if you want to create an Emergency Repair Disk. NCR strongly recommends creating an Emergency Repair Disk.
11. Select “Yes” to create an Emergency Repair Disk. You are prompted to insert a blank high-density diskette into the drive. Select “OK” when you have inserted the diskette. The disk is formatted, and appropriate files are copied to it.

Completing the Installation

To complete the installation, follow these steps:

1. You are prompted that the Windows NT installation is complete. Remove all media from their respective drives.

WARNING: Contrary to the instructions on the screen, WAIT three to five minutes before selecting Restart Computer. If you do not wait, the server's caching disk controller may not have enough time to complete all writing operations, and your system disk may not be installed correctly.

2. The system reboots, and if you selected the NTFS file system for any volume on your system, the file system is automatically converted to NTFS at this time.
3. If a Mylex controller is installed on the system and you wish to monitor and control this device, copy the DACMON.EXE and DACADM.EXE from the Mylex driver diskette to the \WINNT\SYSTEM32 directory. For the Startup Program Group, create a Program Item icon for DACMON.EXE. This utility will run as an icon and report all Mylex errors to the Event Log (application log). Refer to the Mylex DAC960 Software Kit documentation for additional information.

At this point the installation of Windows NT Server is complete. You can now install application software such as NCR Server Manager which is on the *NCR ValuePlus CD for BackOffice* provided with your server.

Reinstalling Windows NT Server

If you need to reinstall the Windows NT Server Operating System, perform the procedures presented in this section. The following circumstances will require you to perform a reinstallation:

- You need to install the Diagnostic Partition on a disk that currently has NT installed
- Your disk has crashed and you need to replace it
- You want to expand the size of your NT partition
- You want to change the type of SCSI Controller in use

Before beginning the procedures in this section you will need a copy of each book listed below.

- *NCR S46 User Guide* (BST0-2142-38)
- *NCR S46 Service Guide* (BST0-2142-39)

Table 1-2 lists procedures that must be performed to reinstall NT.

Table 1-2. Procedures to Reinstall Windows NT Server

Step	Procedure	Reference
1	Identify a target disk for the root partition	"Identifying a Target Disk" subsection in this section.
2	Install a tape device to backup the root disk	"Installing a Tape Device" subsection in this section.
3	Back up the files on the root disk	"Backing Up NT" subsection in this section.
4	Reformat the target disk (for expanding the size of your NT partition or changing the type of SCSI Controller in use)	If you are using a Mylex Controller, refer to "Configuring the Disk Arrays Using the Mylex DAC960PL Adapter" under the section "Performing a Full Installation." If you are using an Adaptec Controller, refer to the "Formatting the Hard Drive Using the SCSISelect Utility" subsection under this section.
5	Install the Diagnostic Partition	*NCR S46 Server User Guide*; Chapter 3, "Hardware Related Utilities and Applications"

Step	Procedure	Reference
6	Re-install NT on the target disk (during the re-installation, you will select the partition size)	Perform the appropriate procedures found in the section “Performing a Full Installation.”
7	Restore the backup files from tape onto the new root partition	“Restoring Backups” subsection in this section.

Identifying a Target Disk

The first step in reinstalling NT is to identify a target disk for the root partition. The target disk should have either the same or a greater capacity than the drive being restored.

Installing a Tape Device

To install the tape device, follow these steps:

1. Login to Windows NT.
2. Select “Windows NT Setup” from the Main program folder. A Windows NT Setup window displays.
3. Select “Add/Remove Tape Device” under the Options menu. A Tape Device Setup window displays.
4. Select “Add.”
5. Choose the tape device from the device pull-down list and select Install. If the tape device is not listed, select the other item, insert appropriate media with proper tape device driver, and choose “OK.”
6. Insert the Window NT Server Installation CD in the CD ROM drive and choose “Continue.” The tape device is installed.
7. Close the Tape Device Setup window then exit the Windows NT Setup window.
8. Select “OK” when the Setup message displays. This message reminds you to restart the computer.

9. Shutdown and restart the system.
10. Login to Windows NT.

Backing Up NT

To backup NT Server, follow these steps

1. Open the Backup utility from the Administrative Tools program folder.
2. Indicate that you want to backup the Operating System by selecting the drives that contain all the NT system files, and select “Backup.”
3. Press the Backup button then indicate that you want to backup the NT Registry by selecting “Backup Registry” in the Backup Information window.
4. Indicate that you want to verify backup by selecting the “Verify After Backup” check box.
5. Give a description of this backup, in the “Description” text box under the Backup Set Information section, since more logical drives may be backed up on this tape.
6. If you want to replace all data on the tape, choose “Replace.” Choose “Append” to append to an existing backup set.
7. Insert a tape into the tape drive and choose “OK.” The backup status window displays. When the backup is complete, the Backup Utility verifies the backup.
8. Select “OK” in the Setup Message window when the Backup Utility is finished verifying the backup.
9. Repeat step 1 through 7 for all logical drives on that disk. Append these backups to the tape. Do not replace any existing backups.
10. Select the exit item under the Operation menu in the NT Setup window.

Formatting the Hard Drive Using the SCSISelect Utility

This procedure is used to perform a low level format of the entire disk if you are using an Adaptec Controller. It is only to be used if you want to expand the size of your NT partition or you want to change the type of SCSI Controller in use. Should you require additional information on configuring adapter settings, refer to "Configuring the Adapter Settings Using the Adaptec BIOS SCSISelect Utility" under the section "Performing a Full Installation."

1. Reboot the server and press **Control + A** when prompted to invoke the SCSISelect Utility.
2. Under Bus:Device, highlight the appropriate entry (either 1st or 2nd adapter as listed), and press **Enter**. Note that SCSI-A is denoted as "01:0Bh -> ChA" and SCSI-B is denoted as "01:0Ch -> ChB."
3. Highlight "SCSI Disk Utilities" and press **Enter**.
4. Highlight the target disk to be reformatted and press **Enter**. You are prompted to format the disk or verify the disk media.
5. Highlight the Format Disk option and press **Enter**. **A red warning message will appear informing you that the drive is about to be low level formatted and all data on the disk will be erased.**
6. Highlight the "Yes" option and press **Enter**. You are asked to confirm your decision to format the disk.
7. Highlight the "Yes" option and press **Enter**. A message appears indicating how long the formatting operation may take.
8. Once the Formatting Complete message appears, press **Enter** then press **Esc** and follow the prompts to exit the Utility as necessary.
9. Insert the *NCR S46 Server* Platform CD in the CD-ROM drive and reboot the server.

Restoring Backups

To restore backups, follow these steps:

1. Install a tape device by performing all steps in the “Installing a Tape Device” section.
2. Login to Windows NT.
3. Open the Backup utility from the Administrative Tools program folder.
4. Insert the tape into the tape drive.
5. Choose “Catalog” from the Operations menu to find out all the backup sets on the tape. The Catalog window displays. You can view the description to see which drive this set should go on.
6. Invoke the Tapes window and indicate the backup set you want to restore first by selecting the desired check box.
7. Select Restore. A Restore Information pop up menu displays.
8. Indicate the drive on which the NT files are to be restored by selecting a drive option under Restore to Drive.
9. Select the Restore Local Registry check box.
10. Select the Verify After Restore checkbox.
11. Press **Enter**. A Confirm File Replace message displays prompting you to replace the NT files on disk with files on backup.
12. Select “Yes to All” when presented. The backup files are copied to the hard drive, and then verified. You will then be notified that “The active files restored will not become usable until the computer is restarted.”
13. Select “OK” to continue. The verify status checkbox will then be displayed. After verification is complete, select “OK.”
14. Shutdown and restart the system so active files will become available.

Chapter 2

Installing Windows NT Server 4.0

The following sections provide information on installing or re-installing Microsoft Windows NT Server 4.0 on your system.

Before installing or re-installing the operating system, use the table below to determine which section to refer to.

If ...	Then refer to...
Windows NT Server was pre-loaded at the factory	“Completing a Factory Installation”
Windows NT Server was not pre-loaded at the factory	“Performing a Full Installation”

Before beginning to install your operating system, you should read the introductory sections of the Microsoft *Start Here, Basics and Installation Guide for Microsoft Windows NT Server.*

Completing a Factory Installation

If your system was pre-loaded at the factory with Microsoft Windows NT Server 4.0, you need to complete the installation by providing some site-specific configuration information.

Before beginning, get the copy of the Microsoft *Start Here, Basics and Installation Guide for Microsoft Windows NT Server* that came with your server, because you will use it during the procedure.

To complete the factory installation:

- Identify information required to complete the installation
- Complete User/Server Information
- Configure the Network
- Complete the Installation
- Install Service Packs
- Install Server Manager

Note: Before beginning to install, confirm that the mouse and keyboard are plugged into the correct receptacles in the back of the server, and that the server is connected to the network onto which it will be installed.

Identify Information

You **must** answer several questions correctly to complete the installation of Windows NT Server. If you do not answer these questions correctly, you might have to re-install the operating system.

Make sure you have the following information before continuing with the operating system installation:

- Name of your domain or workgroup
- Unique name of this system
- Whether the system is to be a Primary Domain controller (PDC), a Backup Domain Controller (BDC), or a non-Domain Controller.

Complete User/Server Information

Continue the installation by completing user and server specific information.

Go to the *Start Here, Basics and Installation Guide for Microsoft Windows NT Server* manual, Chapter 6, "Entering Your Personal Information," and enter the specific information about your business.

Configure the Network

The installation procedure now prepares to configure the network on your system by searching for the network card.

Go to the *Start Here, Basics and Installation Guide for Microsoft Windows NT Server* manual, Chapter 7, "Connecting to the Network" and configure the network.

Complete the Installation

You are informed that the Windows NT installation is almost complete. Remove all media from their respective drives.

Go to the *Start Here, Basics and Installation Guide for Microsoft Windows NT Server manual,* Chapter 8, "Finishing Installation" and complete the section.

The pre-loaded installation of Windows NT Server is complete.

Install Service Packs

Microsoft fixes to NT are provided through Service Packs. The latest service packs recommended for installation on your server can be found in the following directory:

```
C:\SRV_PACK
```

Go to this directory and read the “readme.txt” file for installation instructions.

Future updates to the service packs are available from the Microsoft web page (www.microsoft.com).

Additional information on service packs can be obtained from the General Purpose Computing Global Support Center at 1-800-GOWINNT.

Install Server Manager

The Server Manager application can be installed from the "NCR ValuePlus For BackOffice CD" included with your server. Installation documentation is provided with the CD – *NCR ValuePlus CD for BackOffice Installation and Product Overview*.

Performing a Full Installation

If Windows NT Server was not pre-loaded on your server at the factory, use this section to prepare your system and install the software.

To perform the procedures in this section you need the following server manuals.

- *NCR S46 Server User Guide*
  BST0-2142-38
- *NCR S46 Service Guide*
  BST0-2142-39
- *Start Here, Basics and Installation Guide for Microsoft Windows NT Server*
- *NCR PCI SCSI Host Adapter User's Guide* (if installed)

The following table list procedures that must be performed to complete a full installation:

Step	Procedure	Reference
1	Confirm hardware setup	"Confirm Hardware Setup" subsection.
2	Confirm CMOS configuration	"Confirm CMOS Configuration" subsection.
3	Obtain Necessary Media	"Obtain Necessary Media" subsection.
4	Configure Disk Arrays using the Mylex DAC960PL Adapter	"Configure Disk Arrays Using the Mylex DAC960PL Adapter" subsection.
5	Install the Diagnostic Partition	*NCR S46 Server User Guide*; Chapter 3, "Hardware Related Utilities and Applications"
6	Configure the server using the System Configuration Utility (SCU)	"Configure the Server Using the System Configuration Utility (SCU)" subsection.
7	Configure adapter settings using the Adaptec BIOS SCSISelect Utility	"Configure Adapter Settings Using the Adaptec BIOS SCSISelect Utility" subsection.

Step	Procedure	Reference
8	Configure PCI SCSI Adapter	If your server has an NCR PCI SCSI adapter pre-installed or you are planning to install an PCI SCSI adapter yourself, refer to the *NCR PCI SCSI Host Adapter User's Guide* for installation and configuration information.
9	Install Operating System	"Install Operating System" subsection. and Microsoft's Start Here, Basics and Installation Guide for Microsoft Windows NT Server. **Caution:** You must install the Diagnostic Partition before installing NT. You cannot install the Diagnostic Partition after installing NT without having to delete your NT partition first.
10	Install Service Packs	The service packs are available from the Microsoft web page (www.microsoft.com). Additional information on service packs can be obtained from the General Purpose Computing Global Support Center at 1-800-GOWINNT.

For additional information about installing Windows NT, refer to the Microsoft *Start Here, Basics and Installation Guide for Microsoft Windows NT Server.*

Confirm Hardware Setup

Before beginning to install, confirm the following hardware requirements:

- Ensure all Hot pluggable SCSI devices are not manually set to an ID. Ensure drives are firmly seated in the hot-docking backplane.

Note: SCSI ID's within the Hot Dock are dynamically configured by drive location. Drive termination is provided by the hot-docking backplane.

- Ensure all bus cards are seated properly in the system. For maximum performance, use EISA or PCI cards, not ISA cards.
- Ensure that the boot disk is in the correct slot (top left position in the primary SCSI hot-docking backplane)

Confirm CMOS Configuration

Use the BIOS setup Utility to confirm the CMOS configuration as follows.

1. Reboot your system and press **F1** when prompted to access the BIOS Setup.
2. Under Main, verify the following:
   - Correct System date and System time
   - *Floppy Options* parameter is set to "1.44/1.25 MB 3-1/2".
   - *Primary IDE Master*, *Primary IDE Slave*, *Secondary IDE Master*, and *Secondary IDE Slave* parameters are all set to "Not Installed."

Note: IDE hard disks are not supported for use under Windows NT on the Server.

3. Under Advanced, follow these steps:
   - Under Peripheral Configuration, set the following values:

Configuration Mode:	Manual
Standard IDE Interface:	Disabled
Floppy Interface:	Enabled

   - Under Advanced Chipset Configuration, verify the following values:

MPS Version:	1.4
Second I/O APIC:	Disabled
PERR Mode	Disabled

4. Under Security, follow these steps:
   - Set *User Password*, if required.
   - Set *Administrator Password*, if required.
5. Under Exit, press **Enter** to Exit Saving Changes.

Obtain Necessary Media

Before you begin to install Windows NT Server 4.0, make sure that you have the following media:

- Server Platform CD-ROM
- Windows NT V4.0 Server Installation boot diskettes (3)
- Windows NT V4.0 Server CD
- Adaptec 7800 Family Manager diskette
- Blank 3.5” High Density diskette for creating an emergency repair diskette
- Documentation Kits for all network adapters (NT drivers are included in the kit)

Note: NT Drivers for each adapter are delivered with the Documentation Kit for that adapter. The kit includes the correct version of the drivers.

- Microsoft’s *Start Here, Basics and Installation Guide for Microsoft Windows NT Server* that came with your server

Configure Disk Arrays Using the Mylex DAC960PL Adapter

Installing a Mylex DAC960PL Adapter

To prepare the system for Mylex DAC960PL Disk Array Adapter installation, if **not pre-installed** at the factory, follow these steps:

CAUTION: Use a grounding strap to prevent harmful static discharge when handling, installing and cabling host adapters.

1. Turn off the power to the console and the system. Disconnect the system power cord from either the rear panel of the system or from the wall outlet.
2. Refer to the *NCR S46 Server Service Guide*, Chapter 5, “Servicing Add-In Boards,” for information about inserting and removing add-in boards.

3. Install the Mylex DAC960PL adapter in Slot 1 of PCI Bus 1 (third PCI slot from bottom, marked as P4) as instructed in the *Mylex DAC960PL Disk Array Controller User's Manual* and the *NCR S46 Server Service Guide*. If there are multiple Mylex DAC960PL RAID controllers in the system, make sure that the bootable drive is connected to the top Mylex controller.

CAUTION: Do not install the Mylex adapter into an EISA slot. Attempted installation into an EISA slot will damage the adapter board.

4. Refer to Chapter 6 "Configuring Adapters" in the *NCR S46 Server User Guide* for cabling your Mylex Disk Array Adapter.
5. Connect the desired disk drives to the Mylex DAC960PL Adapter. Internal drives are automatically terminated correctly by the Hot-docking backplane in the Server. See the *NCR S46 Server User Guide* for more details on the SCSI layout.
6. Make sure, that the CD ROM and tape drives are connected to the narrow SCSI cable and to the on-board SCSI Channel B (marked as "SCSI B").

Configure RAID Disks

To configure RAID Disks, follow these steps:

1. If there are disk drives connected to both the on-board Adaptec controllers and the Mylex controllers, decide which disk you want to install the operating system on. The operating system should be installed only on hard disk drives connected to Adaptec controller A (SCSI A) or to the Mylex controller on PCI BUS 1, Slot 1 (P4) or to the top Mylex controller if multiple Mylex controller are in the system.
2. If you want to install the operating system to an array connected to the Mylex DAC960PL Adapter, make sure of the following:

   – The Mylex BIOS is "enabled" – viewable during Power On Self Test (POST) sequence. With multiple Mylex cards, the first Mylex card must be the boot controller.

   If you want the operating system installed on the Adaptec, make sure of the following:

   – The BIOS is "enabled" for the Adaptec controller.

3. Boot to the Diagnostic Partition and run Utilities and Diagnostics.
4. Select “System Config Utils” – “Adapter Config Utils” – “RAID Mylex” and press **Enter**. Follow the directions in the *User Guide* to configure disk arrays. Also referencing the *DAC960PL Disk Array Controller User’s Guide*, if necessary.
5. For best performance, configure the operating system disk(s) as RAID 1 or RAID 6. Other disks should be configured to match the application, normally as RAID 5. If desired, leave one disk as a hot standby.

Special Considerations

- If more than one Mylex Disk Array adapter is used, install additional adapters in PCI slots lower in the scan order. Additional Mylex adapters can be used for external disk expansion cabinets.
- An external disk (JBOD Single-ended configuration) expansion cabinet attached to a second Mylex adapter must have proper SCSI termination at the end of each SCSI bus.

Install the Diagnostic Partition

Refer to the *NCR S46 Server User Guide*, Chapter 4 for complete instructions for installing the Diagnostic Partition.

Configure the Server Using the System Configuration Utility (SCU)

Follow the procedure below to configure the server using the SCU. Refer to Chapter 5, “Configuring Your Server” of the Server *User Guide* for additional information on the System Configuration Utility.

1. At system startup, press D when prompted, to boot to the Diagnostic Partition.
2. At the MS-DOS startup menu press **Enter** to select “Run Utilities and Diagnostics”.

3. From the Diagnostic Partition Main Menu select “System Config Utils,” and then select “Execute SCU.” When the blue System Configuration Utility banner page displays, press **Enter** to continue.
4. From the main SCU menu, highlight “Step 3: Change Configuration Settings” and press **Enter**.
5. Specify an administrative boot/configuration password. If the password has not been specified, you may press **Esc** when prompted to bypass this password, *or* you may specify a new password. This password may be disabled from the System Board setup screen**.**

Note: Except for EISA and ISA cards, no board names are used, but are referenced by class name (for example “PCI SCSI Device”), PCI “Bus number,” and “Dev letter.”

The device scan order, as specified in the Server *User Guide*, can help you determine which specific vendor card occupies which PCI slot.

“PCI Undefined Device” denotes the INCA (Interrupt and Control ASIC) chip which arbitrates bus and control handshaking, and can be enabled to check such things as: internal voltages, temperature, fan failures, and chassis intrusion.

6. Highlight “System Board” and press **Enter**.
   - *MP Spec Version* (Systems Group) – verify that “MP Spec V1.4” is selected.
   - *Secondary I/O APIC Control Option* (System Performance) –verify “Disable Secondary IOAPIC” is listed.
   - *PCI System Error Detection* (Management Subsystem Group) – verify “PCI System Error Detect” is Disabled.
   - *Shadowing ISA ROMs Options* (Memory Subsystem Group) – verify that all memory regions are “Enabled” except for regions allocated as “shared memory” (memory shared between the adapter and the system, such as on the Eicon WAN adapter or the Server Monitor Module) or regions assigned as memory-mapped I/O. An adapter’s memory assignments can be viewed from the Global Resources Map in the SCU.

Note: ROM Shadowing is automatically disabled for an adapter whose .CFG file contains the string "CACHE=NO" in its memory references.

- *Extended Memory Options* (Memory Subsystem Group) – verify that "Cache Mode" is set to "Enable" and that "1MB ISA Hole Control" is set to "Disable."
- Set the On-Board Communications Devices as follows, if necessary:

Serial Port 1 Configuration:	COM1:3F8h -IRQ4
Serial Port 2 Configuration:	COM2:2F8h -IRQ3
Parallel Port Configuration:	LPT1:378h - IRQ7

When all of the options on this System Board screen have been set, press **Esc** to return to the previous screen.

7. Highlight each of the listed devices, and press **Enter**.
   - Ensure that the IRQ, port address and I/O address for the device are not in conflict with any other device on the system. Conflicts are typically detected by the SCU automatically.
   - Ensure that any device-specific configuration options are set correctly. For example, for network cards with multiple connectors, specify the connector type as appropriate for your system.

   Highlighting a PCI entry and pressing **Enter** displays the "Enabled: Current Configuration" option by default. To change the device's IRQ assignment, press **Enter** to change to "Enabled: Manual Configuration." Press **F6** which enables you to change "Resources."

CAUTION: Pressing **F6** when "Enabled: Manual Configuration" is selected causes the current PCI device resource assignments to change!

8. When all devices have been examined and configured to your satisfaction, press **Esc** to return to the SCU main menu. Choose "Step 4: Save Configuration" before exiting to save changes you have made.
9. If you want to obtain a printed copy of your configuration, select "Step 5: View Switch /Jumper Settings," then press **Enter** to continue. Press **F7** to specify the output destination.
10. After the changes have been saved, select "Step 6: Exit" and press **Enter** as necessary to return to the Diagnostic Partition menu.

Note: If you choose "Step 6: Exit" without saving your changes, the system prompts you to save before exiting. You must then back out and choose "Step 4: Save Configuration."

11. Create backup diskettes of the System Configuration Utility and BIOS flash utility.
    - To create a copy of the SCU utility, select "System Config Utils" from the main menu, select "Create SCU Backup" and press **Enter**.
    - To create a copy of the BIOS flash utility, select "BIOS Flash Utility" from the main menu, select "Create Flash Backup", and press **Enter**.

Note: These diskettes are to be used solely for backup purposes. You are not authorized to copy program files, nor to use these diskettes on any other system.

12. Remove the diskette from the floppy disk drive and press **Esc** to return to the Diagnostic Partition menu.

Configure Adapter Settings Using the Adaptec BIOS SCSISelect Utility

The Adaptec BIOS SCSISelect Utility allows you to configure the SCSI AIC-7880 host adapter to settings other than defaults. Select one of the options below to start the SCSISelect utility.

- If you have a Diagnostic Partition installed, select the "System Config Utils", "Adapter Config Utils" and then "SCSI-Adaptec"
- Boot the server and press **Control + A** when prompted for the SCSISelect utility

Chapter 7, "Configuring Adapters" of the Server *User Guide* provides additional information on configuring adapter settings.

Note: If the system boot device is connected to one of the Adaptec SCSI channels, then the host adapter BIOS should be enabled for that SCSI channel. When this option is disabled, the system BIOS does not scan the Adaptec channel for a bootable drive.

To use the Adaptec BIOS SCSISelect Utility:

1. Under “Bus:Device,” highlight the entry representing the SCSI-A adapter and press **Enter**. Note that SCSI-A is denoted as “0X:0Bh -> ChA” and SCSI-B is denoted as “0X:0Ch -> ChB” where 0X is the PCI bus number.
2. Highlight “Configure/View Host Adapter Settings,” and press **Enter**.
   - *SCSI Bus Interface Definitions*, – verify that the “Host Adapter SCSI ID” is “7” and that SCSI Parity Checking is “Enabled”
   - *Additional Options* – choose *SCSI Device Configuration* and press **Enter**. Set the fields as specified below:
   - *Initiate Sync Negotiation* – should normally be set to “yes” for operating devices
   - *Maximum Sync Transfer Rate* – may be set to “40.0” for all SCSI devices. This value is the default and defines the “maximum” transfer rate. SCSI devices typically negotiate their transfer speeds.
   - *Enable Disconnection* – should normally be set to “yes”
   - *Initiate Wide Negotiation* – can be left “yes”, even if “wide” SCSI is not used
   - If BIOS is enabled, you must choose to *Send Start Unit Command* to power up drives on BIOS load of the Adaptec controller. You should set this option to “no” for the SCSI-ID 7, which is your controller.
3. Press **Esc** to return the SCSISelect Configuration Menu and select “Advanced Configuration Options” from the “Additional Options” list. The following fields can normally be left as the default.
   - *Host Adapter BIOS* – should be set to “Enabled” if bootable drives are attached.
   - *Support Removable Disk Under BIOS as Fixed Disks* – should be “Boot Only.”
   - *Extended BIOS Translation for DOS Drives > 1GB* – should be “Enabled.”
   - If desired, enable “Display <CTRL-A> Message During BIOS Initialization.”
   - *Multiple LUN Support* – should be “Disabled.”
   - *BIOS Support for Bootable CD-ROM* – should be “Enabled.”
   - *BIOS Support for Int13 Extensions* – should be “Enabled.”

- *Support for Ultra SCSI Speed* – should be "Enabled."

4. Press **Esc** twice to return to the Options menu. If configuration changes have been made, you are prompted to "Save Changes Made?." Select "Yes" to save the changes, and press **Enter**.
5. From the Options Menu, select "SCSI Disk Utilities" and press **Enter**.
   - A SCSI channel poll is performed and a current list of all devices the controller detects is displayed. You may highlight a valid choice and press **Enter** to view or perform additional utilities.
   - Formatting a hard disk performs a low-level reinitialization and erases all data.
   - You may perform a DISK VERIFY operation.
6. Return to the top level menu, highlight the entry representing the SCSI-B adapter and press **Enter**. Repeat Steps 2 through 6. Note that SCSI-A is denoted as "0X:0Bh -> ChA" and SCSI-B is denoted as "0X:0Ch -> ChB" where 0X is the PCI bus number.
7. When complete, press **Esc** until prompted to exit the Utility.
8. You must reboot at this time. Choose "Reboot System" then "Reboot" from the Diagnostic Partition menu.

Disabling Adapter BIOS

To boot from an adapter that is lower in the scan order and also to free system resources, use the Adaptec BIOS SCSISelect Utility to disable the adapter BIOS as follows:

Note: The SCSI controller cannot be used as the boot controller if the BIOS is disabled.

1. Under "Bus:Device," highlight the appropriate entry (either channel A or channel B, as listed) and press **Enter**.
2. Select "Configure/View Host Adapter Settings" and press **Enter**.
3. Under "Additional Options," press **Enter** to choose "Advanced Configuration Options."
4. Go to "Host Adapter BIOS" and press **Enter**. Select "Disabled" and press **Enter**.

5. When finished, press **Esc** three times to return to the Main Menu.
6. Press **Esc** to exit the utility. Select "Yes" when asked to exit the utility. The system then prompts you to press any key to reboot.

Configure PCI SCSI Adapter

If your server has a PCI SCSI adapter pre-installed or you are planning to install an PCI SCSI adapter yourself, refer to the *PCI SCSI Host Adapter User's Guide BD10-4939-A* for installation and configuration information.

Install Operating System

The information presented prior to this point has been specific to your type of server. The instructions for installing the operating system are found in the Microsoft *Start Here, Basics and Installation Guide for Microsoft Windows NT Server.*

You must install the Diagnostic Partition before installing NT. You cannot install the Diagnostic Partition after installing NT without having to delete your NT partition first.

CAUTION: When installing NT, use the adapter drivers located on diskette(s) which are supplied with the specific adapter.

Go to the *Start Here, Basics and Installation Guide for Microsoft Windows NT Server manual* and read Chapter 5, "Beginning Installation."

The following notes are designed to supplement the information in the *Start Here, Basics and Installation Guide for Microsoft Windows NT Server* manual.

- During the initial installation phase, setup scans your computer to detect mass storage devices, such as CD-ROM drives and SCSI adapters. You should select "S" to install the latest versions of the drivers provided on the diskette(s) supplied with the server. The NT 4.0 installation media may not contain the correct version of the drivers for your system. See the section in the Microsoft *Start Here, Basics and Installation Guide for Microsoft Windows NT Server* manual "Configuring a Mass Storage Device" section for additional details.

Use the following guidelines when performing a custom installation:

  – Press S to skip mass storage device detection then S again to specify the mass storage devices.
  – Select "Other" from the list, then insert the diskette labeled "Adaptec 7800 Family Manager" and press **Enter**
  – If you have a Mylex DAC960PL Disk Array Adapter installed on your system, press S to install its drivers.
  – Select "Other" from the list and insert the "Mylex DAC960 Software Kit" diskette and press **Enter**.
  – Continue to press S to install additional devices as necessary

- If you are reinstalling NT, it is very important that the previous steps for system configuration (verification of BIOS settings, SCU configurations, etc.) are followed.

  Chapter 1, "Installing Windows NT Server 3.51" is geared toward NT 3.51, but should be reviewed for NT 4.0 reinstallations also.

Complete User/ Server Information

Continue the installation by completing user and server specific information.

Go to the *Start Here, Basics and Installation Guide for Microsoft Windows NT Server* manual, Chapter 6, "Gathering Information About Your Computer" and complete the section.

Complete the Installation

You are informed that the Windows NT installation is almost complete. Remove all media from their respective drives.

Go to the *Start Here, Basics and Installation Guide for Microsoft Windows NT Server* manual, Chapter 8, "Finishing Installation" and complete the section.

Install Service Packs

Microsoft fixes to NT are provided through Service Packs. The service packs are available from the Microsoft web page (www.microsoft.com).

Additional information on service packs can be obtained from the General Purpose Computing Global Support Center at 1-800-GOWINNT.

Install Server Manager

The Server Manager application can be installed from the "NCR ValuePlus For BackOffice CD" included with your server. Installation documentation is provided with the CD – *NCR ValuePlus CD for BackOffice Installation and Product Overview*.

Chapter 3

Installing UNIXWare

Overview

After you have setup the system and configured it, you are ready to install the operating system.

This chapter discusses installing UnixWare on your server.

Installation Overview

To install UnixWare on your server, follow these steps:

- Confirm the CMOS settings using BIOS Setup - See Chapter 5, *User Guide*
- Confirm the system settings using the System Configuration Utility - See Chapter 4, *User Guide*
- Confirm the adapter settings using the Adaptec BIOS SCSISelect Utility - See Chapter 6, *User Guide*
- Reboot the system and install the operating system

Rebooting the Server and Installing the Operating System

To reboot the server, follow these steps:

1. Insert the UnixWare Application Server 2.1 Install Disk 1 of 1 disk into the system, and boot the server.
2. Observe the SCO trademark screen.
3. At the blue Welcome screen, press **Enter**.
4. At the Keyboard Type screen, press **Enter** to select the default which is US (ASCII), or enter the appropriate keyboard type.
5. At the System Licensing screen, enter the serial number and the activation key.
6. Verify that the desired number of users license information is displayed. Select Continue Installation.

Inserting the Host Bus Adapter (HBA) Driver

To insert the Host Bus Adapter (HBA) driver and continue, follow these steps:

1. Insert the *SCO UnixWare Host Bus Adapter Drivers* disk at the Install Host Bus Adapter Drivers screen and press **Enter**.
2. The “Please wait, Loading from diskette...”message displays.
3. If using another HBA, you are prompted to enter that additional driver disk at the “Install Another HBA Diskette” prompt. Select “Continue Installation” with the arrow keys, and press **Enter.**
4. To install to a drive connected to the integrated Adaptec adapter when the system is configured with other SCSI adapters, enter the Device Configuration Utility (DCU). Otherwise, choose “Continue Installation,” and skip steps 5 through 7.
5. Select Software Device Drivers, then Host Bus Adapters, and deselect all drives except adsl, ictha, and mitsum.

6. Return to the DCU main menu, select Apply Changes, and exit the DCU. Verify that only the adsl, ictha, and mitsum drives are loaded.
7. The “Please wait while the system hardware drivers are loaded” message displays.

Selecting the Installation Method

To select the installation method and proceed, follow these steps:

1. At the “Select Installation Method” prompt, select Install from CD-ROM (the default), and press **Enter**.
2. At the verification screen, select Yes, continue the installation, and press **Enter**.
3. At the “Destructive Installation” prompt, you select how much disk space for UnixWare to use. Select Press **Enter** to select “View/Change Current Disk Configuration.”

CAUTION: The S46 minitower server comes preconfigured with a DOS diagnostic partition. Do **not** delete this partition.

4. When the “Disk 1 Partitions” screen displays, use the down arrow key to move the blinking cursor to the first unused area below the DOS partition. Press **F2**. Select “Unix System” from the menu.
5. Tab to the Status column and press **F2** to activate the partition.
6. Tab to the % column, and enter the percentage of the disk you want to partition for UNIXWare.
7. Tab to the Cylinders column, and enter the number of cylinders.
8. Press **F10** to apply the changes.
9. At the “System Node Name:” prompt, enter a short, descriptive name and press **Enter**. Press **F1** for help.
10. At the “Date and Time” prompt, verify all entries and press **F10** to Apply.
11. At the verification screen, press **Enter.**

12. At the “Install Menu” prompt, select View or Change Package Selection, and select OS Multiprocessor Support.
13. Select Accept All Settings and Install Now, and press **Enter**.

Observing Screen Messages

You briefly see the “Loading...” message followed by the “Checking the Primary Hard Disk” message.

Then you see a graph with an increasing completion which displays as a bar moving from left to right. This process takes some time.

When the process is complete, you see “Making File Systems” and “Installing Software” messages, followed by another bar graph showing Installation Progress.

Reinserting the Host Bus Adapter (HBA) Driver

1. When prompted to reinsert the HBA disk you used earlier, do so and press **Enter**. The “Setting up UnixWare” message displays. Please wait.
2. When the Choose Platform Support Module screen displays, press **Enter** to select the Intel MP Specification. The “Building the Operating System” message displays. Please wait.
3. At the “UnixWare 2.1 installation is complete” prompt, remove any disk and CD.

Rebooting the System

1. Press **Enter** to reboot and restart UnixWare.
2. The “Installing drivers for the Network Card(s)” message displays. Please wait. When prompted, accept all entries.
3. At the “Enter Setup Values from System Files” prompt, enter any values where necessary (IP, DNS info, etc.) and press **F10** to continue.

4. At the “Language Supplement Installation” prompt, enter the country information (press ← to select “United States”) and Apply. Please wait.
5. At the “Mouse Selection” prompt, select 3. PS/2-compatible Mouse, and press **Enter**.
6. At the “Select number of mouse buttons” prompt, press → to select the number of buttons. Tab to Apply, and press **Enter**.
7. Press **Enter** to start the mouse test. Follow the on-screen instructions to test.
8. At the “Owner’s Account” prompt, enter a name and login ID. Cursor or TAB to Apply, and press **Enter**.

Entering a Password and Completing the Installation

1. Press **Enter** at the “Password” screen. Enter the password and reenter it for verification.
2. At the UNIX System Installation screen, press **Enter** to continue.
3. Enter the password, and re-enter it for verification.
4. Press **Enter** to continue.
5. “The system is coming up” message displays.

The installation is complete when the SCO Login screen displays.

Chapter 4

Installing SCO UNIX

Overview

After you have setup the system and configured it, you are ready to install the operating system.

This chapter discusses installing the SCO UNIX SCO Open Server Release 5 on your server:

Installation Overview

To install SCO UNIX on your server, follow these steps:

- Confirm the CMOS settings using BIOS Setup - See Chapter 5, *User Guide*
- Confirm the system settings using the System Configuration Utility - See Chapter 4, *User Guide*
- Confirm the adapter settings using the Adaptec BIOS SCSISelect Utility - See Chapter 6, *User Guide*
- Reboot the system and install the operating system
- Install SMP
- Install TCP/IP communications

Rebooting the Server and Installing the Operating System

To reboot the server, follow these steps:

1. Insert the boot disk into the system, and boot the server.
2. At the BOOT: prompt, press **Enter**.
3. At the Installing SCO OpenServer screen, press **Enter**.
4. Choose Install Media and ID.
5. Select Keyboard type.
6. Enter the license number and code using the exact syntax on the yellow license card.

Entering Setup Information

To enter setup information and proceed, follow these steps:

1. At the Installation Setup screen, select Fresh for install type.
2. At the Software Setup screen, enter a unique name or use “scosysv,” which is the default for the system name. The default selection for Domain Name is normally okay.
3. Select Traditional Security.
4. At the Preparing Your Disk screen, choose “Interactive fdisk/divvy” and accept the choices.
5. Choose No.
6. At the Configuring Optional Software screen, select deferred for network card. You must also provide the correct information for your particular monitor in the Video selection.
7. Enter and verify your password.
8. At the next screen, select OK to proceed.
9. Press **1** to continue with the hard disk initialization.

10. Select “Use Rest of Disk for UNIX.”
11. Select “Activate Partition.”
12. Enter the partition to make active.
13. Press **q** to quit the drive configuration.
14. Press **q** again.
15. Press Return.
16. Answer the configuration questions as prompted.
17. After answering the questions, files are copied from the CD-ROM to the hard drive. This will take awhile.
18. Press **Enter** when the install message appears.

The installation is complete.

Installing SMP

To install SMP, follow these steps:

1. Insert the install CD in the CD-ROM drive.
2. Enter Maintenance Mode (Press **Enter** on boot, init 1 or shutdown -i1).
3. Type "/etc/custom" and press **Enter**.
4. Select Software and Install New.
5. At the "What host to install from?" prompt, press **Enter**.
6. When prompted to select a media device, press ↓ until the SCSI CD-ROM drive is highlighted.
7. Press **Enter** twice. The "Copying files" message will display briefly.
8. When the Select Product to Install menu displays, press ↓ to scroll down and highlight SCO Symmetrical Multiprocessing Support.
9. Press **Enter** twice to select Full.
10. Enter the license information when prompted.
11. A message will be displayed saying that an additional processor has been found. Press **Enter**.
12. When asked if you have additional CPUs, press **Enter** to select No.
13. Press **Enter** to continue.
14. After the software is installed, select Host and Exit.
15. Shutdown and reboot the system for the changes to take effect.

Installing TCP/IP Communications

To install TCP/IP, follow these steps:

1. Enter Maintenance Mode (Press **Enter** on boot, init 1 or shutdown -i1).
2. Type "/etc/custom" and press **Enter**.
3. Select Software and then Install New.
4. At the "What host to install from?" prompt, press **Enter**.

Inserting the SMC SuperDisk

1. When prompted to insert the media and select the media device, insert the SMC SuperDisk for SCO UNIX into the flex drive. Verify the Media Device is set for Floppy Disk Drive 0. Press ⏎ to get the choices for the media devices.
2. Observe the message, "Installing: SMC-SCO LLI 3.4 Super Disk (version 1.1.3a)."
3. At the "Do you want a FULL or PARTIAL installation?" prompt, select FULL.
4. Ignore all error messages.
5. After the SMC software drivers are installed, return to the UNIX prompt.

Completing the Installation

1. At the # prompt type "netconfig."
2. Select Hardware and Add New LAN Adapter.
3. Select "smpw SMC 8432, 8434 and 9332 Ethernet Adapter, board 0."
4. Select Add Protocol. Observe the following:

```
"Select one networking product to be added to:
smpw SMC8432, 8434 and 9332 Ethernet Adapter, board 0

HW smpw SMC 8432, 8434 and 9332 Ethernet Adapter, board 0
* - SCOTCP/IP
  - SCOIPX/SPX"
```

5. Select the desired protocol, and press **Enter**.
6. If TCP/IP is selected, configure the TCP/IP settings.
7. After the desired protocol is successfully added, observe the following if TCP/IP was selected (IPX/SPX may be slightly different):

```
"Current networking configuration:

HW SCO TCP/IP Loopback driver
   SCO TCP/IP
    - SCO NFS Runtime System
HW smpw SMC 8432, 8434 and 9332 Ethernet Adapter, Board 0
   SCO TCP/IP
    - SCO NFS Runtime System"
```

8. Relink the kernel and reboot for these changes to take effect.